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Foster

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(54) **PUTTER WITH ADJUSTABLE ALIGNMENT FEATURES**

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(51) **Int. Cl.**

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A63B 53/04	(2015.01)
A63B 53/06	(2015.01)
A63B 53/00	(2015.01)
A63B 71/06	(2006.01)

(52) **U.S. Cl.**

CPC ***A63B 53/04*** (2013.01); ***A63B 53/007*** (2013.01); ***A63B 53/0487*** (2013.01); ***A63B 53/065*** (2013.01); *A63B 2053/0433* (2013.01); *A63B 2053/0441* (2013.01); *A63B 2053/0491* (2013.01); *A63B 2071/0694* (2013.01)

(58) **Field of Classification Search**

CPC A63B 53/065; A63B 53/0487; A63B 2053/0441; A63B 53/04; A63B 53/007; A63B 2071/0694; A63B 2053/0433; A63B 2053/0491

USPC 473/231–255, 339

See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

4,659,083	A *	4/1987	Szczepanski	A63B 69/3685 473/252
4,688,798	A *	8/1987	Pelz	A63B 69/3685 473/249
6,471,600	B2 *	10/2002	Tang	A63B 53/04 473/242
6,988,955	B2 *	1/2006	Stoakes	A63B 53/0487 473/242
7,244,191	B2 *	7/2007	Tang	A63B 53/0487 473/335
7,371,184	B2 *	5/2008	Tao	A63B 53/0487 473/242
7,384,345	B2 *	6/2008	Sherman	A63B 53/0487 473/249
8,480,504	B2 *	7/2013	Hilton	A63B 53/0487 473/242
2005/0187028	A1 *	8/2005	Chang	A63B 53/0487 473/231
2007/0191130	A1 *	8/2007	Kouldus	A63B 53/0487 473/251
2008/0287210	A1 *	11/2008	Womersley	A63B 53/02 473/253
2010/0323807	A1 *	12/2010	Rha	A63B 53/0487 473/252
2014/0128173	A1 *	5/2014	Quan	A63B 53/0487 473/242

* cited by examiner

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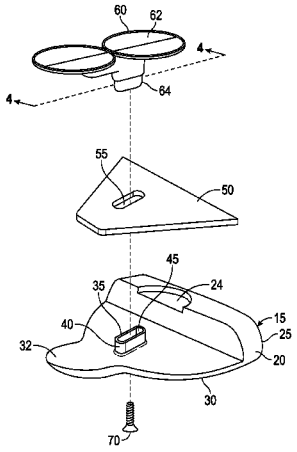
(57) **ABSTRACT**

An adjustable golf club putter head is disclosed herein. The putter head includes a removable alignment feature that can be swapped with a different alignment feature to change the alignment pattern, and a removable divider piece that contrasts with the alignment feature and can be swapped with different divider pieces to affect the cosmetics of the putter head and also adjust the putter head's mass properties.

18 Claims, 3 Drawing Sheets



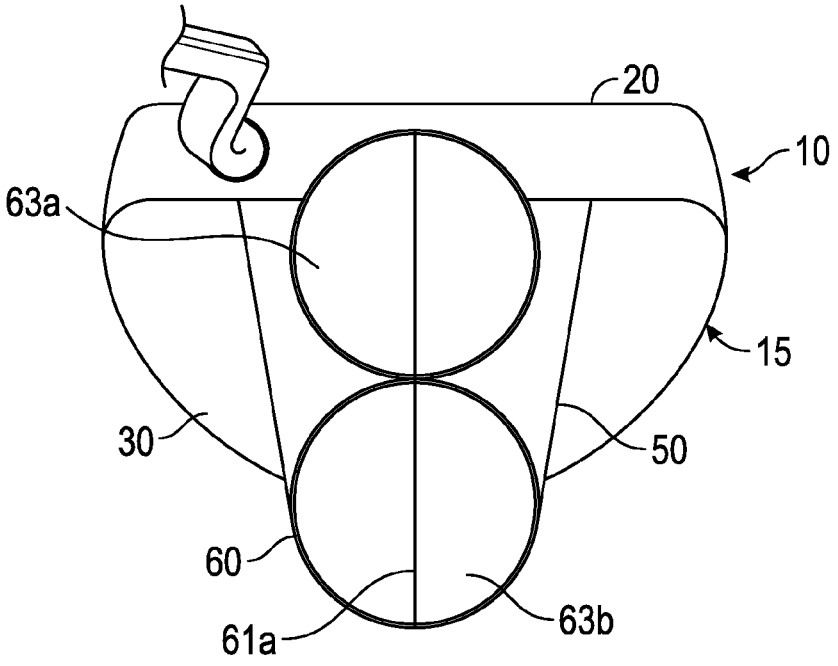


FIG. 1

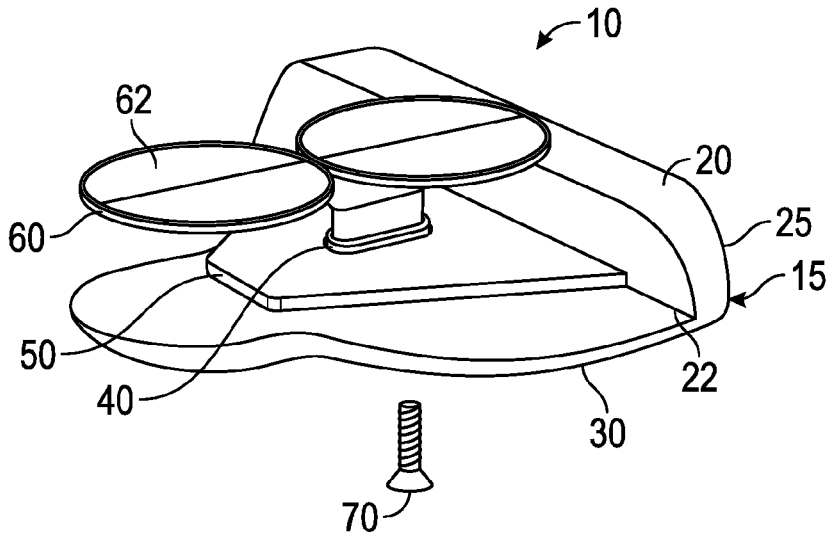


FIG. 2

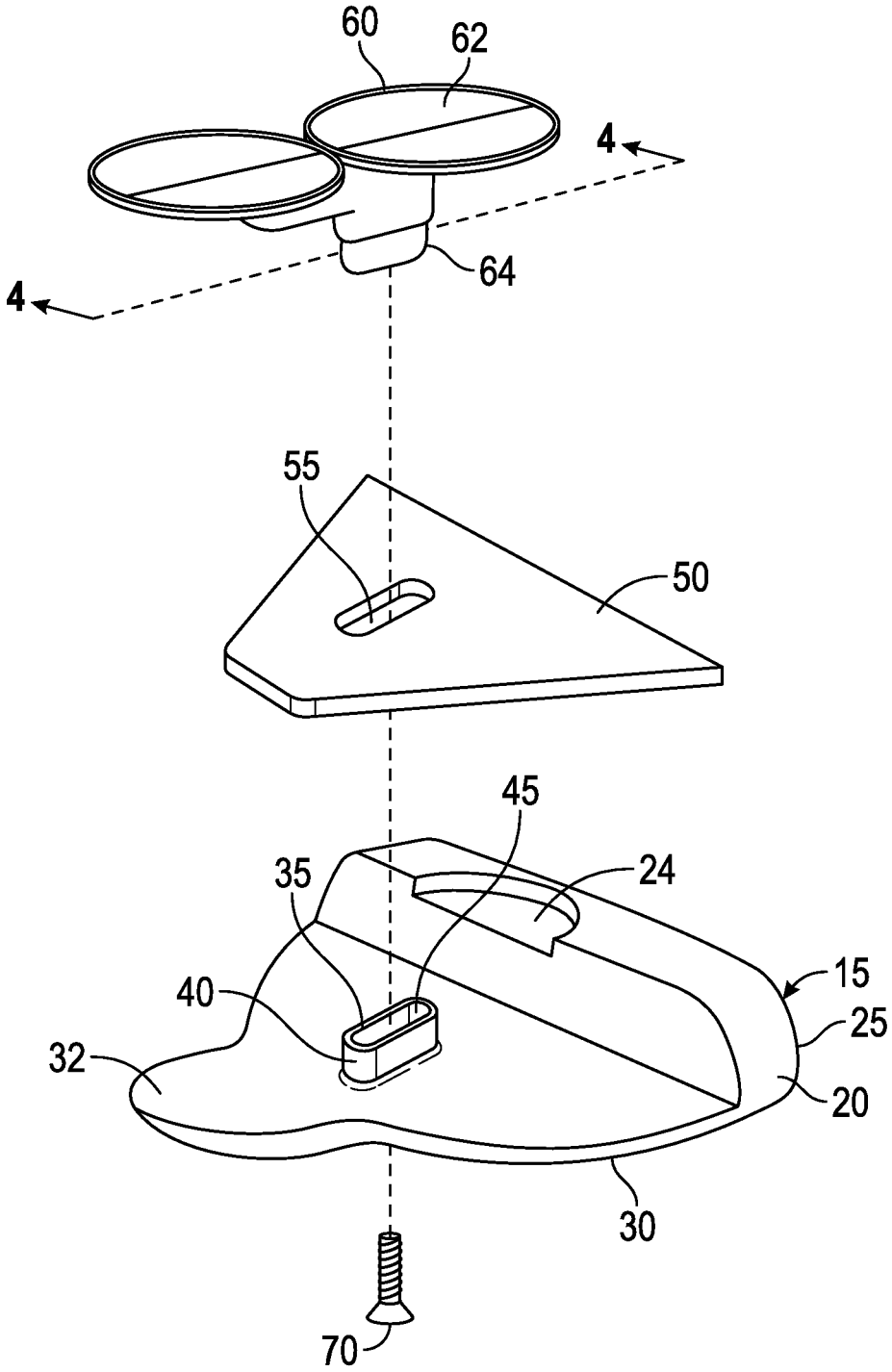


FIG. 3

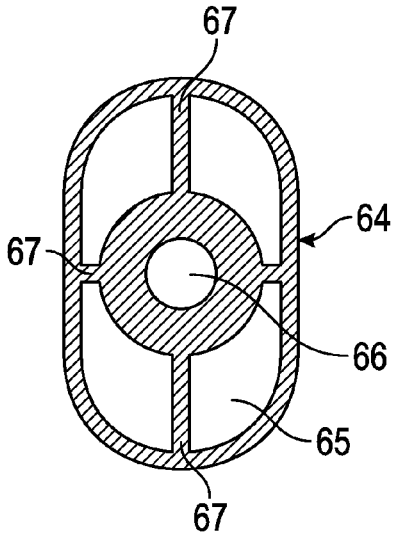


FIG. 4

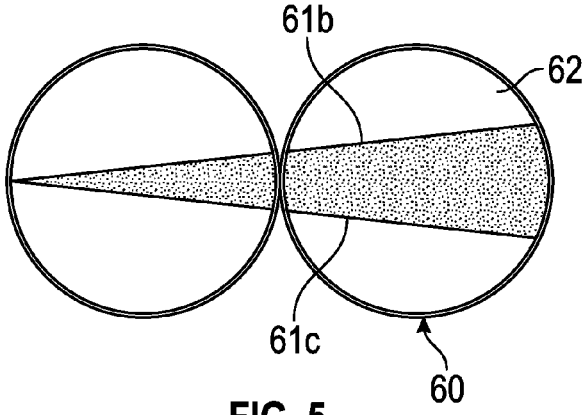


FIG. 5

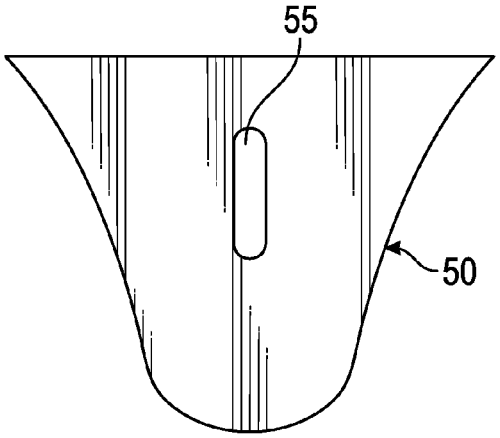


FIG. 6

PUTTER WITH ADJUSTABLE ALIGNMENT FEATURES

CROSS REFERENCES TO RELATED APPLICATIONS

The present application claims priority to U.S. Provisional Patent Application No. 61/988,729, filed on May 5, 2014, the disclosure of which is incorporated by reference in its entirety herein.

STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT

Not Applicable

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates to a putter type golf club head comprising alignment markings. The present invention more specifically relates to a putter-type golf club head having adjustable alignment markings on its top surface to help a golfer line up the golf club head with a golf ball.

2. Description of the Related Art

The golf industry routinely develops putters that are intended make the game of golf easier for the high handicap player. One such putter is disclosed in U.S. Pat. No. 4,688,798 to David Pelz, which discloses a putter with an alignment means to assist a golfer in aiming a golf ball toward a hole during putting. The Pelz patent discloses using two or three golf ball shaped indicators as the alignment means. The golf ball shaped indicators may be circles, hemispheres, or complete spheres. The Pelz patent discloses positioning the indicators along a line extending rearward from the center of percussion.

Another patent that discloses an alignment means is U.S. Pat. No. 4,659,083 to Szczepanski. The Szczepanski patent discloses a group of lines that converge toward the center of the face of the putter. The large number of converging lines taught by Szczepanski can be distracting to a golfer, however.

A further patent that discloses an alignment means is U.S. Pat. No. 7,371,184 to Tao. The Tao patent also discloses a group of lines that converge at the center of the face of a putter.

Although these inventions have provided putters for making the game of golf more enjoyable for high handicap players, the prior art has not optimized an adjustable putter alignment feature for high handicap players.

BRIEF SUMMARY OF THE INVENTION

One aspect of the present invention is a putter head comprising a removable alignment feature. Another aspect of the present invention is a putter head comprising a metal body, a lightweight divider piece, and an adjustable alignment feature.

Another aspect of the present invention is a putter comprising a body comprising a face portion and a sole portion, a divider piece comprising an opening, and an alignment piece comprising a planar portion and a first protrusion extending perpendicular to the planar portion, wherein the planar portion comprises an alignment feature, wherein the sole portion comprises a through bore, and wherein the first protrusion extends through the opening and is received within the through bore. In some embodiments, the first protrusion may comprise a threaded bore. In another embodiment, the first protrusion may have a skeletal structure, and the threaded bore may be disposed within a hollow portion of the first protrusion and held in place by a plurality of struts.

In other embodiments, the alignment feature may comprise at least two circles, and also line bisecting each of the two circles or a pair of converging lines that extend across the two circles. In another embodiment, the sole portion may comprise a second protrusion, and the through bore may extend through the second protrusion. In a further embodiment, the putter may comprise a screw having a head and a threaded portion, the through bore may extend from an opening in a lower surface of the sole to an opening in the upper surface of the sole, the first protrusion may comprise a threaded bore, and the threaded portion may extend through the through bore and engage the threaded bore of the first protrusion to removably fix the alignment piece to the body. In other embodiments, the divider piece may conform to at least a portion of a shape of the sole. In another embodiment, the sole portion may extend rearwards from a lower edge of the face portion, and the body may have an L shape.

Another aspect of the present invention is an adjustable putter head comprising a body comprising a face portion comprising an upper surface, a striking surface, and a lower surface, a sole portion comprising an upper surface, a lower surface, a first protrusion extending from the upper surface, and a through bore extending from an opening in the lower surface to an opening in the first protrusion, a divider piece comprising an opening, an alignment piece comprising a planar portion comprising an alignment feature and a thickness and a second protrusion comprising a threaded bore, and a screw comprising a threaded portion and a head, wherein the second protrusion extends perpendicular to the planar portion, wherein the second protrusion extends through the opening in the first protrusion and is received within the through bore, and wherein the threaded portion of the screw extends through the through bore and engages the threaded bore of the first protrusion to removably fix the alignment piece to the body.

In one embodiment, the alignment feature may comprise at least two circles. In a further embodiment, the upper surface of the face may comprise a recess sized to receive a portion of one of the two circles. In yet another, further embodiment, the recess may have a depth that is equivalent to the thickness of the alignment feature. In an alternative embodiment, the alignment feature may comprise at least one line extending across the two circles, which may comprise a pair of converging lines. In still another embodiment, the divider piece may comprise a first color, wherein the alignment feature comprises a second color, wherein the first color is dark, and wherein the second color is light. In another embodiment, each of the alignment piece and the divider piece may be composed of a material selected from the group consisting of composite, plastic, and aluminum.

Another aspect of the present invention is a kit comprising a putter body comprising a front portion and a sole portion, a first divider piece comprising a first shape, a first opening, and a first material, a second divider piece comprising a second shape, a second opening, and a second material, a first alignment piece comprising a first alignment feature, a first protrusion, and a third material, a second alignment piece comprising a second alignment feature, a second protrusion, and a fourth material, and a screw comprising a threaded portion and a head, wherein the first protrusion comprises a first threaded bore and the second protrusion comprises a second threaded bore, wherein the first material is different from the second material and the third material is different from the

fourth material, and wherein the threaded portion of the screw is sized to fit within and engage the first and second threaded bores.

Having briefly described the present invention, the above and further objects, features and advantages thereof will be recognized by those skilled in the pertinent art from the following detailed description of the invention when taken in conjunction with the accompanying drawings.

BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWINGS

FIG. **1** is a top plan view of a preferred embodiment of the present invention.

FIG. **2** is a side perspective view of the embodiment shown in FIG. **1**, with the divider piece shown in partially transparent form to illustrate the other parts of the embodiment.

FIG. **3** is an exploded view of the embodiment shown in FIG. **1**.

FIG. **4** is a view of the adjustable alignment feature shown in FIG. **3** along lines **4-4**.

FIG. **5** is a top plan view of an alternative adjustable alignment feature for engagement with the embodiment shown in FIG. **1**.

FIG. **6** is a top plan view of an alternative divider piece for engagement with the embodiment shown in FIG. **1**.

DETAILED DESCRIPTION OF THE INVENTION

A preferred embodiment of the present invention is shown in FIGS. **1-4**. In this embodiment, a putter-type club head **10** comprises a body **15** having a front portion **20** with a striking face **25** and a sole **30** extending rearwards from a lower edge **22** of the front portion **20**, such that the body **15** has an L-shaped structure. The body **15** also includes a protrusion **40** extending from a central area **35** of the upper surface **32** of the sole **30**. The protrusion **40** has a through bore **45** that extends through the sole **30** and ends at an opening in a lower surface (not shown) of the sole **30**. The through bore **45** may be threaded, but preferably has a smooth interior surface. The body **15** preferably is composed of a metal material such as steel, tungsten, or titanium, and its L-shaped structure positions the center of gravity at a low, forward position on the head **10**.

As shown in FIGS. **1-3**, the head **10** includes a divider piece **50**, which preferably is composed of a lightweight material such as composite, plastic, or another type of polymer, and which includes an opening **55** sized to receive the protrusion **40**, which preferably extends through the opening **55**. The divider piece **50** preferably has a color that contrasts with the other parts of the head, as shown in the Figures, and is shaped such that it is visible to a user when the putter head **10** is viewed from the top. The divider piece **50** is removable, and thus can be swapped with divider pieces **50** having different shapes, colors, and/or material compositions to adjust the cosmetics and mass properties of the putter head **10**. An alternative divider piece **50** having a slightly different shape, which conforms to the shape of the upper surface **32** of the sole **30**, is shown in FIG. **6**.

The head **10** also includes a removable alignment piece **60** comprising a planar alignment feature **62** and a protrusion **64** that extends perpendicular to the alignment feature. At least a part of the protrusion **64** is sized to be received within the through bore **45** of the protrusion **40** extending from the sole **30**. The protrusion **64** includes a threaded bore **66** that aligns with the through bore **45** of the protrusion **40**, and is sized to receive the threads of a screw **70** that removably fixes the alignment piece **60** and the divider piece **50** to the sole **30** of the body **15**. As shown in FIG. **4**, the protrusion **64** preferably comprises a skeletal structure, with the threaded bore **66** suspended inside a hollow portion **65** and held in place by a plurality of struts **67**. The alignment piece **60** preferably is composed of a non-metal material, such as a polymer or composite, but can be formed of a metal material if a user wishes to raise the center of gravity location or otherwise adjust the mass properties of the putter head **10**.

The alignment feature **62** of the preferred embodiment comprises a pair of circles **63***a*, **63***b* having the same approximate size as a golf ball and a straight line **61***a* bisecting the two circles **63***a*, **63***b* and extending perpendicular to the striking face **25**. In an alternative embodiment, shown in FIG. **5**, the alignment feature **62** may comprise a pair of converging lines **61***b*, **61***c* that extend across the pair of circles **63***a*, **63***b* towards the striking face **25**. The alignment feature **62** preferably has a light color, and the divider piece **50** preferably has a contrasting dark color. As discussed herein, the divider piece **50** can be swapped for a different divider piece **50** having a different contrasting color and/or shape to better draw the golfer's eyes to the alignment feature **62**.

As shown in FIG. **3**, the front portion **20** of the body **15** includes an upper surface **21**, which has a recess **24** shaped to receive a portion of one of the circles **63***a*, **63***b* of the alignment feature **62**. The recess **24** has a depth that is equivalent to the thickness of the alignment feature **62**, such that the upper surface of the alignment feature **62**, when engaged with the body **15**, is flush with the upper surface **21** of the front portion **20** and provides a continuous sighting plane for a golfer.

In another embodiment, the putter head **10** may be sold as a kit to consumers, with a single body **15** and multiple divider pieces **50**, alignment pieces **60**, and screws **70** having different shapes, colors, alignment features **62**, and/or material compositions to allow a consumer to customize the putter head **10** for optimal performance.

The embodiments disclosed herein may include any of the features of the golf club heads disclosed in U.S. Pat. Nos. 7,244,191 and 8,480,504, the disclosure of each of which is hereby incorporated by reference in its entirety herein.

From the foregoing it is believed that those skilled in the pertinent art will recognize the meritorious advancement of this invention and will readily understand that while the present invention has been described in association with a preferred embodiment thereof, and other embodiments illustrated in the accompanying drawings, numerous changes, modifications and substitutions of equivalents may be made therein without departing from the spirit and scope of this invention which is intended to be unlimited by the foregoing except as may appear in the following appended claims. Therefore, the embodiments of the invention in which an exclusive property or privilege is claimed are defined in the following appended claims.

The invention claimed is:

1. A putter comprising:

a body comprising a face portion and a sole portion;

a divider piece comprising an opening; and

an alignment piece comprising a planar portion and a first protrusion extending perpendicular to the planar portion,

wherein the planar portion comprises an alignment feature,

wherein the sole portion comprises an upper surface and a through-bore,

wherein the divider piece is disposed on the upper surface of the sole portion,

wherein the opening is aligned with the through-bore, and

wherein the first protrusion extends through the opening and is received within the through-bore.

2. The putter of claim **1**, wherein the first protrusion comprises a threaded bore.

3. The putter of claim **2**, wherein the first protrusion has a skeletal structure.

4. The putter of claim **1**, wherein the alignment feature comprises at least two circles.

5. The putter of claim **4**, wherein the alignment feature comprises a line bisecting each of the two circles.

6. The putter of claim **4**, wherein the alignment feature comprises a pair of converging lines, each of which extends across the two circles.

7. The putter of claim **1**, wherein the sole portion comprises a second protrusion, and wherein the through bore extends through the second protrusion.

8. The putter of claim **1**, further comprising a screw comprising a head and a threaded portion, wherein the through-bore extends from an opening in a lower surface of the sole portion to an opening in the upper surface of the sole portion, wherein the first protrusion comprises a threaded bore, and wherein the threaded portion extends through the through-bore and engages the threaded bore of the first protrusion to removably fix the alignment piece to the body.

9. The putter of claim **1**, wherein the divider piece conforms to at least a portion of a shape of the sole portion.

10. The putter of claim **1**, wherein the sole portion extends rearwards from a lower edge of the face portion, and wherein the body has an L shape.

11. An adjustable putter head comprising:

a body comprising:

a face portion comprising an upper surface, a striking surface, and a lower surface,

a sole portion comprising an upper surface, a lower surface, a first protrusion extending from the upper surface, and a through-bore extending from a first opening in the lower surface to a second opening in the first protrusion;

a divider piece comprising a third opening;

an alignment piece comprising:

a planar portion comprising an alignment feature and a thickness; and

a second protrusion comprising a threaded bore; and

a screw comprising a threaded portion and a head,

wherein the second protrusion extends perpendicular to the planar portion,

wherein the divider piece is disposed on the upper surface of the sole portion,

wherein the third opening is aligned with the through bore,

wherein the second protrusion extends through the third opening and the second opening and is received within the through bore, and

wherein the threaded portion of the screw extends through the through-bore and engages the threaded bore of the first protrusion to removably fix the alignment piece to the body.

12. The adjustable putter head of claim **11**, wherein the alignment feature comprises at least two circles.

13. The adjustable putter head of claim **12**, wherein the upper surface of the face portion comprises a recess sized to receive a portion of one of the two circles.

14. The adjustable putter head of claim **13**, wherein the recess has a depth that is equivalent to the thickness of the alignment feature.

15. The adjustable putter head of claim **12**, wherein the alignment feature comprises at least one line extending across the two circles.

16. The adjustable putter head of claim **15**, wherein the at least one line comprises a pair of converging lines.

17. The adjustable putter head of claim **11**, wherein the divider piece comprises a first color, wherein the alignment feature comprises a second color, wherein the first color is dark, and wherein the second color is light.

18. The adjustable putter head of claim **11**, wherein each of the alignment piece and the divider piece is composed of a material selected from the group consisting of composite, plastic, and aluminum.

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